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ABSTRACT

This study examines the occurrence of transfer in the simultaneous acquisition of French and Hebrew by 57 native English-speaking children in a primary grades French/Hebrew immersion program in Montreal. The study focuses on three issues: (1) whether transfer of genetically related first and second languages differs quantitatively and qualitatively from transfer of non-related languages, (2) the characteristics that underlie grammatical and lexical transfer, and (3) the extent of transfer between two second languages being learned simultaneously. The children were administered an oral production test using two techniques, a short interview and a picture-based test. Errors in French and Hebrew were classified as interlingual, intralingual, and ambiguous. The results indicate similarities in the way transfer operates in the two languages as well as differences in performance. Certain types of syntax and lexical errors occurred less frequently in Hebrew than in French, possibly because French is genetically related to English. Lexical transfer is more likely to occur than grammatical transfer, and lexical transfer diminishes more rapidly. Grammatical errors were produced systematically by most learners, possibly because the production of grammatical structures is less influenced by communicative strategies than the production of lexical items. (AMH)

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Some Observations on the Nature of Language Transfer in The Simultaneous Acquisition of Two Second Languages*

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Models for language learning have always been influenced by more general theories of learning psychology. During the 1950's and early 1960's, language learning was viewed as a process of habit formation, similar to the Skinnerian S-R learning model. Moreover, in the case of second language (L2) learning, it was postulated that the learner had to develop a new set of habits distinct from those of his mother tongue (L1). Within this framework, transfer from the L1 was considered an automatic process which could either facilitate or hinder the learning of the L2 (Lado, 1964). However, the growing emphasis on the mentalistic approach to language learning has led to the development of the creative construction hypothesis as a model for L2 learning (Dulay & Burt, 1973, 1974). In this model the role of L1 transfer is minimized since L2 development is viewed as a cognitive process similar to L1 acquisition.

In recent years a new hypothesis has been postulated whereby L1 transfer is seen as a process which involves complex cognitive operations (Kellerman, 1979; Sharwood-Smith, 1979). Furthermore, it has been proposed that L1 transfer could be used either as learning strategy or as a communicative strategy, though the two are not mutually exclusive (Kellerman, 1977). Kellerman argues that transfer is controlled by the

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learner's perception of certain L1 and L2 features and by his/her assessment of the distance between the two language systems. In support of this hypothesis Kellerman cites an experiment in which Dutch learners of English had to react to the word-for-word translation of Dutch idiomatic expressions into English. The results indicated that the more proficient learners rejected such translations more often than beginners. In a similar vein, Jordens (1977) reports that Dutch learners of German rejected unacceptable translations of Dutch sentences into German more often than acceptable ones and that advanced learners did so more often than beginners.

The question is to what extent do these findings reflect speech production in real communicative situations? Moreover, the research described above pertains primarily to the transfer of specific semantic features and not to the transfer of syntactic structure. With respect to the latter, a number of recent studies (Adiv, 1980; Aronson-Berman, 1980; Sheen, 1980) show evidence of L1 interference in the speech patterns of advanced L2 learners. It is possible that syntactic errors caused by L1 transfer are more prone to "fossilize", i.e., become a permanent feature of the learner's interlanguage[1], than lexical errors. Such a hypostbesis also suggests that transfer at different linguistic levels (e.g., lexical and grammatical) may involve different cognitive operations. This notion may be further explored by looking at transfer in trilingual situations. For instance, Dole (1980) examined the verbal production in English (L2) of a native Polish-speaking subject who had

moved to a French community in Montreal and had learned French as a third language. He found that an overwhelming proportion of lexical errors were attributable to French, whereas most of the grammatical interference errors were seen to be the result of negative transfer from Polish.

The present study will address itself to these issues by examining the occurrence of transfer in the simultaneous acquisition of two second languages, namely French and Hebrew. More precisely, the study will focus on the following questions:

(1) Does transfer differ quantitatively and qualitatively when the L1 and the L2 are genetically related from when they are not so related?

(2) What are the characteristics that underlie grammatical and lexical transfer?

(3) What is the extent of transfer between two second languages which are learned simultaneously?

Method

Subjects

The data analyzed in this study were collected from 57 native English-speaking children enrolled in a French/Hebrew immersion program in Montreal. The children were studying in grades 1, 2 and 3 and were selected from two schools situated in geographically different areas of the city. At each grade level, selection of the children was based on the following criteria: (1) the children were "average" students

in terms of scholastic achievement, (2) they did not differ significantly from one another in terms of non-verbal ability (according to Raven's [1956] Coloured Progressive Matrices Test) and (3) they spoke no language other than English with either parent. All the children came from middle to upper-middle socio-economic backgrounds. Their schooling had been entirely in French and Hebrew from kindergarten onwards except for a daily period of English language arts introduced in grade 3 in one of the schools. Approximately equal amounts of instructional time were devoted to French and Hebrew in each school.

Materials and Testing Procedure

All the children were administered an oral production test. Two testing techniques were used: a short interview and a picture-based test. The interview consisted of a number of questions related to the child's family such as the name and age of siblings. The picture-based test consisted of nine sets of pictures. Each set was constructed so as to form a small story. The stories were introduced by means of a few short sentences followed by a question. In order to induce the children to use adjectives, certain objects of different sizes and colors were used in addition to the pictures. Every child was tested individually. Each test lasted approximately 15 minutes and the entire testing session was tape recorded. The same test was used in both languages. The French version was administered first and the Hebrew version was administered three weeks later in order to avoid confusion between the languages.

Analysis of Data

All the tapes were transcribed for analysis. Errors in both French and Hebrew were classified as: (1) interlingual (hereafter Inter), (2) intralingual (hereafter Intra) and (3) ambiguous. Errors were identified as Inter, i.e., attributable to transfer from either L1 or L3 (where L3 represents the other language being learned), when the deviant form observed paralleled the corresponding surface structure in either L1 or L3. Errors were classified as Intra if they were either developmental errors, i.e., errors also made by young native speakers of that language, or errors attributable to other instances of over-generalization of an L2 pattern where the deviant form produced did not parallel the corresponding structure in either L1 or L3 (e.g., the constant use of masculine singular articles with feminine nouns in French). Errors which could be identified as either Inter or developmental were classified as ambiguous. Errors which could not be attributed to any of these sources were excluded from the study. The Inter errors were then divided into two major categories: grammatical and lexical. Grammatical errors were further subdivided into the following error types: (1) substitution, (2) omission, (3) intrusion and (4) word order. Lexical errors were subdivided into five error types: (1) word coinage, (2) semantic range, (3) phonological approximation, (4) L1 insertion and (5) L3 insertion.

Results and Discussion

In order to situate the Inter errors within the context of the children's overall performance in French and in Hebrew, the Inter, Intra and ambiguous errors were calculated as proportions of the total number

of grammatical elements produced at each grade level. The term "grammatical element" refers here to those elements of structure that can be identified on basis of their membership in traditionally defined grammatical classes such as nouns, verbs, prepositions, etc.. The results indicate that the proportion of Intra errors exceeded the proportion of Inter errors at the three grade levels in French and in grades 2 and 3 in Hebrew. A chi square analysis showed these differences to be significant at the .001 level. Moreover, the percentage of Inter errors decreased more rapidly across the three grades than the percentage of Intra errors, so that the difference between Inter and Intra errors was more pronounced in grade 3 than in grade 1 (Table 1). These findings are in agreement with those reported by other researchers such as Lococo (1976) and Taylor (1975), who found that L1 interference decreased with increased proficiency in the L2. The comparison of the French and Hebrew data also shows that the children produced fewer grammatical elements in Hebrew than in French, especially in grade 1. In grades 2 and 3 these findings can be largely attributed to differences in the structure of the two languages. However, the more pronounced difference in grade 1 was due to the children's very limited linguistic repertoire in Hebrew at that grade level[2].

Next, for each language, the grammatical and lexical errors were calculated as a function of the total number of Inter errors produced in that language at each grade level. The results show that in both French and Hebrew the proportion of lexical errors decreased markedly across the three grades (Table 2). Furthermore, the decrease was more pronounced in Hebrew than in French. Consequently, in grade 3 the percentage of grammatical

errors in Hebrew was almost three times that of the lexical errors, whereas in French the proportion was approximately two-to-one (see Figure 1).

Closer examination of the different types of grammatical Inter errors reveals that the pattern of development of the omission, substitution and intrusion errors across the three grades was similar in French and Hebrew, although the relative frequency of each type of error differed in the two languages (Figure 2). In Hebrew omissions constituted the majority of errors, whereas in French both omission and substitution errors were frequent. Moreover, in French intrusion and word order errors accounted for less than 10% of the grammatical Inter errors in each grade (Table 3).

Schachter (1979) has recently discussed error frequency according to three categories: (1) errors that are only rarely produced, (2) errors that are casually produced and (3) errors that are repeatedly produced. In the present study, I would like to examine two kinds of errors: those which were repeatedly produced at all three grade levels and those which were at first rarely produced, but then increased across the grades, so that they fitted into the category of "repeated errors" in grade 3. The term "repeated error" will refer to an error which was produced 10 times or more in any one grade and constituted at least 10% of the grammatical Inter errors in that grade[3].

In Hebrew, only omission errors were produced repeatedly at all three grade levels. Most of these errors pertained to structures in which the semantic concepts "agent" and "patient" had to be expressed grammatically by an indirect object (dative case), whereas in English, these concepts are expressed by the grammatical subject, e.g.,

le-	david	yeš		sefer.	
with	David	is	(a)	book.	David has a book.

le- uri kar.
unto Uri (is) cold. Uri is cold.

Here the children omitted the preposition le- and thus produced a structure which paralleled the corresponding English pattern (*david yeś sefer[4], *uri kar).

Omission errors in French were more diversified than in Hebrew and involved a variety of grammatical elements (auxiliary verbs, determiners, pronouns and prepositions). Moreover, the omission of such an element seemed to be conditioned not only by transfer, but also by its position within the sentence. Only omissions which occurred in the second part of a sequence were produced repeatedly in all three grades, e.g.,

*Elle a donné un manteau et mitaines au petit garçon.
(Elle a donné un manteau et des mitaines au petit garçon).
She gave a coat and mittens to the little boy.

*Ce garçon a un chapeau et l'autre n'a pas.
(Ce garçon a un chapeau et l'autre n'en a pas.)
This boy has a hat and the other doesn't.

Thus, omission in Hebrew resulted in the reorganization of the sentence structure, whereas omission in French resulted mainly in the reduction of a specific part of the sentence structure.

Repeated substitution errors in Hebrew pertained to structures similar to those discussed with reference to the omission errors. However, here pronouns were used instead of nouns. Hence, the error involved the

substitution of a subject pronoun for the required object pronoun, e.g.,

*hi yeš harbey 'oxel.
(la yeš harbey 'oxel.)[5] She has a lot of food.

These errors were infrequent in grade 1, but so was the children's overall use of pronouns in that grade. It is possible that this avoidance of pronominalization represents a certain lack of flexibility in the learners' use of the language which was only overcome in grades 2 and 3 when the children became generally more verbal in Hebrew.

In French, two kinds of substitution errors were produced repeatedly at all three grade levels. The first kind of error occurred when the verb être (to be) appeared in contexts where the verb avoir (to have) should have been used, e.g.,

*Il est froid.
(Il a froid.) He is cold.

This error requires, once again, reorganization at the sentence structure level since the French structure is N-V-N, whereas the corresponding English structure is N-V-Adj. The use of the verb être (to be) in this and similar contexts seems to be well established in the children's interlanguage since the verb was used in a variety of forms all of which were grammatically correct though contextually inappropriate, e.g.,

*Maintenant il n'était pas froid.
(Maintenant il n'avait pas froid.) Now he wasn't cold.

*Les animaux sont faim.
(Les animaux ont faim.) The animals are hungry.

It was the more extensive use of these structures in grades 2 and 3 which

caused the substitution errors to increase across the grades in French.

The second kind of repeated substitution error occurred when the children used the demonstrative pronoun ce instead of the personal pronouns il or elle in contexts where these pronouns had non-animate referents, e.g.,

*C'est ouvert.	
(Elle [la porte] est ouverte.)	It [the door] is open.

It is noteworthy that in both French and Hebrew, all the deviant structures discussed here - except for the French omission errors - could be produced by analogy to other French and Hebrew patterns for which transfer from L1 is positive, e.g.

in French:

Il est heureux.	He is happy.
C'est magnifique!	It's great!

and in Hebrew:

david kore sefer.	David reads (a) book.
uri ra'ev.	Uri (is) hungry.

The only grammatical Inter errors which increased steadily from grade 1 to grade 3 were word order errors in Hebrew which, at times, also involved the omission of a grammatical element. As an example, consider the following noun phrase:

ha- yeled	ha- ze	
the boy	the this	this boy

Closer examination of the data reveals that this noun phrase was

always produced correctly in grade 1, in spite of the fact that the word order in this structure contrasts with the corresponding L1 pattern. However, in grades 2 and 3, we sometimes get the correct pattern and sometimes an incorrect pattern like *ha-ze yeled, where the demonstrative marker ha-ze precedes the noun and the discontinuous morpheme ha- (the) is not repeated a second time. Since the noun phrases containing the morpheme ha- were much more diversified in grades 2 and 3 (e.g., šney ha-yeladim which was produced as *ha-šney yeladim, a literal rendering of "the two boys"), it is possible that the structure ha-yeled ha-ze was initially produced as an unanalyzed chunk or prefabricated pattern (Hakuta, 1974) and that it was only at a later stage, when the elements of structure had been identified, that transfer occurred.

Let us now turn to the lexical Inter errors. As noted above, these errors decreased proportionally faster across the three grades than the grammatical errors. Closer investigation of the different types of lexical errors revealed that the majority of these errors in both languages consisted of direct insertions of L1 and L3 vocabulary. The results also indicate that the spectacular decrease of lexical Inter errors across the three grades was mainly due to a decrease of these direct insertions of foreign vocabulary (Table 4). Of particular interest is the distribution of L3 insertions since these errors constitued practically the only observable instances of transfer between the two second languages. Here the results show that French insertions into Hebrew decreased steadily from grade 1 to grade 3, whereas Hebrew insertions into French increased from grade 1 to grade 2 and then decreased from grade 2 to grade 3. These

findings point, once again, to the fact that the children's Hebrew vocabulary in grade 1 was much weaker than their French one.

The distribution of the other three types of lexical errors (word coinage, semantic range and phonological approximation) does not show a consistent pattern across the three grades. Errors in semantic range increased steadily in French and accounted for nearly one fourth of all the lexical errors in grade 3. In Hebrew, on the other hand, word coinages were more frequent than errors in semantic range. Moreover, neither word coinages nor errors in semantic range were produced in Hebrew in grade 1 (Figure 3).

Further examination of the lexical errors reveals two additional differences between lexical and grammatical Inter errors. First, the lexical errors, other than the direct L1 and L3 insertions, were contextually constrained, whereas the grammatical errors occurred in a variety of contexts. Thus, we get marcher for aller when the intended meaning is "to walk" as opposed "to ride", e.g.,

*Les petites filles marchent à l'école.
(Les petites filles vont à l'école)
The little girls are walking to school.

but we do not find *Elle marche de la cuisine (she walks out of the kitchen) which was usually rendered correctly as Elle sort de la cuisine. Similarly, in the case of phonological approximations we get */broš/ for brosse (brush), but not */finiš/ for finissent (they finish).

The other major difference between lexical and grammatical Inter

errors pertains to the distribution of errors among the children tested at each grade level. Here rank order calculations indicate that, in the case of the grammatical errors (except in cases where less than 10 errors were produced), over three fourths of the children contributed evenly to the pool of errors. On the other hand, 60% of the lexical errors in French and 75% of those in Hebrew were produced by only one fourth of the children. This was largely due to the fact that the children often used alternate means to express content. Thus, the following statements were noted in response to a picture which depicted two boys throwing snowballs at each other:

(1) Il(s) lance(nt) une boule de neige.	He/they throw a snowball.
(2)*Il(s) lance(nt) une balle de neige.	" " " " "
(3)*Il a un neige ballon.	He has a snowball.
(4) Ils jouent dans la neige.	They are playing in the snow.
(5)*Ils font une batte de neige.	*They are having a snowfight.
(6)*Ils font une bataille de neige.	" " " " "
(7)*Ils font un <u>snowball fight</u>.	" " " " snowball fight.

The strategies which underlie these various responses have been described as communicative strategies (Tarone, Cohen & Dumas, 1976) and have been defined as attempts by the learner to express meaning in situations where he/she does not have the appropriate L2 form. Moreover, researchers have distinguished these strategies from learning strategies such as overgeneralization and certain kinds of transfer which are more closely associated with notions of grammaticality and rule governed behavior (Tarone, Frauenfelder and Selinker, 1976).

One type of lexical transfer which merits closer investigation is

word coinage. Expressions such as *une bataille de neige (a snowball fight, but literally "a snowfight"), where the item "ball" is completely eliminated, suggest that the learner does not always use a word for word translation but rather chooses the lexical items which he/she perceives as containing the most salient semantic features. Moreover, except in a few cases like the above noted *un ballon neige, the appropriate L2 word order seems to be largely preserved in these coinages, as illustrated by the following additional examples from French and Hebrew:

French:	*un monsieur de feu (un pompier)	a fireman
Hebrew:	*'iš šel 'eš (kabay)	" "

It is noteworthy that the Hebrew form 'iš šel 'eš may reflect transfer from French, since the preposition šel is not needed in Hebrew compounds, e.g., kadur šeleg (a snowball). In some cases, the absence of such Hebrew word coinages in grade 1 may reflect a certain lack of flexibility in the children's ability to combine elements of structure in novel ways since words like kadur (ball) and šeleg (snow) were produced in that grade. In other cases, the children in grade 1 did not seem to have the appropriate vocabulary for these coinages. Thus, in French, the verb chercher (to look for) was rendered as *regarder pour in all three grades, whereas the corresponding Hebrew form *mistakel bišvil (correct form = mexapes) was only produced in grades 2 and 3. However, in grade 1, mistakel (to look) was not used in its generic meaning, while its French equivalent regarder was frequently produced.

Summary and Conclusions

Two major issues have been investigated in this study: the manifestation of transfer in the simultaneous acquisition of French and Hebrew as second languages and the relationship between grammatical and lexical Inter errors. With regard to the first issue, the results of this study suggest that there are certain similarities in the way transfer operates in the two languages. First, it was noted that in grades 2 and 3 the relationship between the Inter and Intra errors in Hebrew was comparable to that in French. Second, in both languages the Inter errors decreased more rapidly across the three grades than the Intra errors. Third, in both languages, the grammatical errors exceeded the lexical ones at all three grade levels. The results of the study also suggest that the children used similar strategies in French and in Hebrew to transmit semantic content for which they did not have the appropriate lexical items. However, differences in performance emerged when the various types of Inter errors were compared across the two languages. Here it was shown that certain errors such as grammatical substitutions and e tensions in semantic range occurred less frequently in Hebrew than in French. Furthermore, it was noted that certain types of Inter errors emerged later in Hebrew than in French. It is possible that there are more opportunities for language transfer to occur when the L1 and the L2 are genetically related, as in the case of English and French, than when they are not so related. On the other hand, the grade 1 children were also found to be noticeably less verbal in Hebrew than in French. Thus,

the late emergence of certain Hebrew Inter errors seems to be associated with the children's level of proficiency in that language. Finally, it has been argued that some Hebrew structures were initially produced as unanalyzed chunks since these structures were produced correctly in grade 1, but not in grades 2 and 3. Such patterns were not observed in French. Here, it would seem that the genetic relationship between English and French has helped the learners to identify certain grammatical features in French prior to those in Hebrew. This factor may, in turn, have contributed to the earlier emergence of certain transfer errors in French. In sum, the findings discussed here seem to support Kellerman's (1979) hypothesis that transfer is controlled by the learner's knowledge of the L2 and by his/her ability to establish equivalences between certain L1 and L2 features.

With regard to transfer between two second languages, the results of this study suggest that lexical transfer is more likely to occur here than grammatical transfer. It is possible that grammatical transfer from L2 to L3 (or visa-versa) is constrained by the structural congruity between the receiving language and the L1. Hence we do not find structures such as *la maison petite (literally "the house little") or *il dehors (literally "he outside") which would reflect transfer from the corresponding Hebrew forms. Alternatively, it is also possible that when two languages are learned simultaneously, transfer from one to the other is minimal because neither of the two languages is sufficiently dominant over the other.

The finding that grammatical Inter errors were most frequent in both languages when the resulting structure paralleled not only the corresponding L1 form, but also an existing L2 (or L3) pattern, suggests that the learner transfers primarily those structures which he recognizes as possible patterns in the target language system. On the other hand, the persistence of these errors at all three grade levels seems to indicate that, although the initial process may have been a creative one, the learner's continued perception of the acceptability of these forms may have caused them to fossilize. In accepting this interpretation, it should be borne in mind that fossilization may be enhanced in immersion settings where the teacher provides the only correct speech model.

With respect to the distinction between grammatical and lexical errors, it was noted that the latter differed from the former on three points: (1) the lexical errors decreased more rapidly across the grades than the grammatical ones, (2) they were only produced by a small number of children at each grade level and (3) they were often contextually constrained. Two possibly related hypotheses may be posited with reference to the lexical Inter errors. First the learning of L2 vocabulary may be particularly susceptible to individual differences. Such a pattern of development has also been noted in L1 acquisition (Nelson, 1981). Second, the strategy a learner adopts to convey meaning may be conditioned not only by the situational context, but also by individual learner characteristics. Tarone, Frauenfelder and Selinker (1976) have also suggested that the choice of a specific strategy to express meaning may occur at a conscious level of cognitive operations. It is possible that this factor underlies

the rapid decrease of the direct insertions of foreign vocabulary noted in both French and Hebrew. What is suggested here is that the learner is aware that the lexical item used in these instances is foreign and, therefore, inappropriate. Hence, as he/she gets more proficient in the L2 (or the L3) this strategy is abandoned. On the other hand, overextensions of semantic range and word coinages may be perceived as appropriate forms in the L2 (or L3) because they are not direct insertions from another language. Hence, such forms are more likely to persist in the learner's lexical repertoire than the foreign vocabulary insertions.

In contrast to the lexical errors, the grammatical ones were noted to be produced systematically by most learners. It is possible that the production of grammatical structures is less influenced by communicative strategies than the production of lexical items. Here two main factors seem to underlie transfer: (1) reduction of the L2 structure and (2) a possible failure to distinguish between two surface structures in the L2 when the L1 has only one corresponding structure. In both cases, transfer helps the learner to simplify the L2 structure. In the first case, simplification is achieved through omission of specific grammatical elements and in the second case, simplification is achieved by a sort of overgeneralization whereby only one of two L2 surface structures is retained, namely the one that corresponds to that particular L1 form. Since both strategies are basic learning strategies not only in L2 development, but also in L1 acquisition (see for instance, Brown [1973] with reference to L1 and Valdman [1975] with reference to L2), the process involved in the transfer of grammatical features may, in fact, represent an extension of

those strategies which stress similarities between L2 learning and L1 acquisition.

The use of such learning strategies can, of course, also be noted in certain types of lexical errors such as overextensions of semantic range where the learner, once again, simplifies the target language system by retaining only one of two available forms. In a similar vein, the occurrence or non-occurrence of grammatical errors may, at times, be influenced by a communicative strategy. Thus, word order errors may have been infrequent in this study because the structures in which such errors are likely to occur (e.g., position of the adjective within the noun phrase or specific direct/indirect object combinations) may have been largely avoided. Here transfer serves as a communicative strategy in so far as it prevents the occurrence of these errors. Similar findings have been noted by other researchers (Hamayan & Tucker, 1979; Kleinman, 1977; Schachter, 1974). It is possible that all the low frequency errors in this study reflect, to some extent, the simultaneous use of transfer as a communicative strategy and as a learning strategy.

In conclusion, it should be pointed out that this study has only attempted to characterize what has been traditionally termed "negative transfer". This approach was motivated by the argument that a model of L2 learning should reflect observable patterns of verbal behavior. It does not preclude, however, the possibility that the learner could be using transfer creatively to produce non-deviant structures in the L2 (or L3). Such a strategy may, in fact, have contributed to the children's greater proficiency in French in grade 1.

Notes

1. The term "interlanguage" has been coined by Selinker (1969) and is defined as the "observable output" resulting from a speaker's attempt to express himself in the L2.

2. Differences between the Hebrew output in grade 1 and those in grades 2 and 3 were not only due to the paucity of the children's vocabulary in grade 1, but also to a certain lack of flexibility in their use of the language. The grade 1 children frequently only enumerated the persons or objects depicted in the pictures or repeated sentence patterns provided by the tester's questions. They made few attempts to paraphrase and often left statements incomplete.

3. According to Schachter the term "repeated error" refers to an error that was provided 10 times or more by a given group. However, since the present study is interested in the relationship between different types of Inter errors, it was decided to define the above term also within this frame of reference.

4. Moreover, the children used the grammatical element yeš as a finite verb, whereas this element is actually an invariant form which does not have the status of a regular verb.

5. The more common word order for this sentence would be yeš la harbey 'oxel with the object pronoun la placed after yeš. However, the reversed order is possible, especially when the speaker wants to emphasize the possessor. The present context called for a comparison of two women: one who had a lot of food on her plate and one who had very little, hence the word used in the example was judged to be acceptable.

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Table 1

Number of Errors and Percentage as a Function of the Total Number of Grammatical Elements Produced in Each Grade

FRENCH

	Grade 1		Grade 2		Grade 3	
	Errors	%	Errors	%	Errors	%
Interlingual	421	7.2	392	5.6	366	4.3
Intralingual	733	12.5	943	13.5	907	10.7
Ambiguous	103	1.8	52	0.7	55	0.6
Total	1257	21.5	1387	19.8	1328	15.6

HEBREW

	Grade 1		Grade 2		Grade 3	
	Errors	%	Errors	%	Errors	%
Interlingual	205	11.8	326	5.8	326	5.6
Intralingual	211	12.1	539	11.3	723	12.5
Ambiguous	0	-	16	0.3	32	0.5
Total	416	23.9	881	18.4	1081	18.6

Table 2

Distribution of Grammatical and Lexical Interlingual Errors as a Function of the Total Number of Interlingual Errors Produced in Each Grade

FRENCH

	Grade 1		Grade 2		Grade 3	
	Errors	%[a]	Errors	%	Errors	%
Grammatical Errors	233	55.5	210	53.5	240	65.5
Lexical Errors	188	44.6	182	46.5	126	34.4
Total	421	100.1	392	100.0	366	100.0

HEBREW

	Grade 1		Grade 2		Grade 3	
	Errors	%	Errors	%	Errors	%
Grammatical Errors	105	51.3	182	55.7	241	73.9
Lexical Errors	100	48.5	144	44.1	35	26.1
Total	205	99.3	326	99.8	326	100.0

[a]Percentages have been rounded off, hence totals may be slightly above or below 100.

Table 3

Distribution of Grammatical Interlingual Errors

According to Error Type[a]

FRENCH

	Grade 1		Grade 2		Grade 3	
	Errors	%[b]	Errors	%	Errors	%
Substitution	98	42.0	109	51.9	121	50.4
Omission	124	53.2	84	40.0	113	47.0
Intrusion	4	1.7	8	3.8	0	-
Word order	7	3.0	9	4.2	6	2.5
Total	233	99.9	210	99.9	240	99.9

HEBREW

	Grade 1		Grade 2		Grade 3	
	Errors	%	Errors	%	Errors	%
Substitution	8	7.6	53	29.1	60	24.8
Omission	91	86.6	100	54.9	135	56.0
Intrusion	6	5.7	19	10.4	15	6.2
Word order	0	-	10	5.4	31	12.8
Total	105	99.9	182	99.8	241	99.8

[a]Percentages calculated as a function of the total number of grammatical interlingual errors produced per language in each grade.

[b]Percentages have been rounded off, hence totals may be slightly above or below 100.

Table 4

Distribution of Lexical Interlingual Errors According to Error Type[a]

FRENCH

	Grade 1		Grade 2		Grade 3	
	Errors	%[b]	Errors	%	Errors	%
Word coinage	19	10.1	25	13.7	22	17.5
Semantic range	20	10.6	27	14.8	29	23.0
Phonol. approx.	25	13.2	18	9.9	9	7.1
English insertions	118	62.7	61	33.5	55	43.6
Hebrew insertions	6	3.1	51	28.0	11	8.7
Total	188	99.9	182	99.9	126	99.9

HEBREW

	Grade 1		Grade 2		Grade 3	
	Errors	%	Errors	%	Errors	%
Word coinage	0	-	11	7.5	22	25.9
Semantic range	0	-	10	6.9	8	9.4
Phonol. approx.	9	9.0	15	10.4	10	11.8
English Insertions	53	53.0	75	52.0	36	42.3
French Insertions	38	38.0	33	22.9	9	10.6
Total	100	100.0	144	99.7	85	100.0

[a]Percentages calculated as a function of the total number of lexical interlingual errors produced per language in each grade.

[b]Percentages have been rounded off, hence totals may be slightly above or below 100.

Figure 1

Distribution of Grammatical and Lexical interlingual Errors

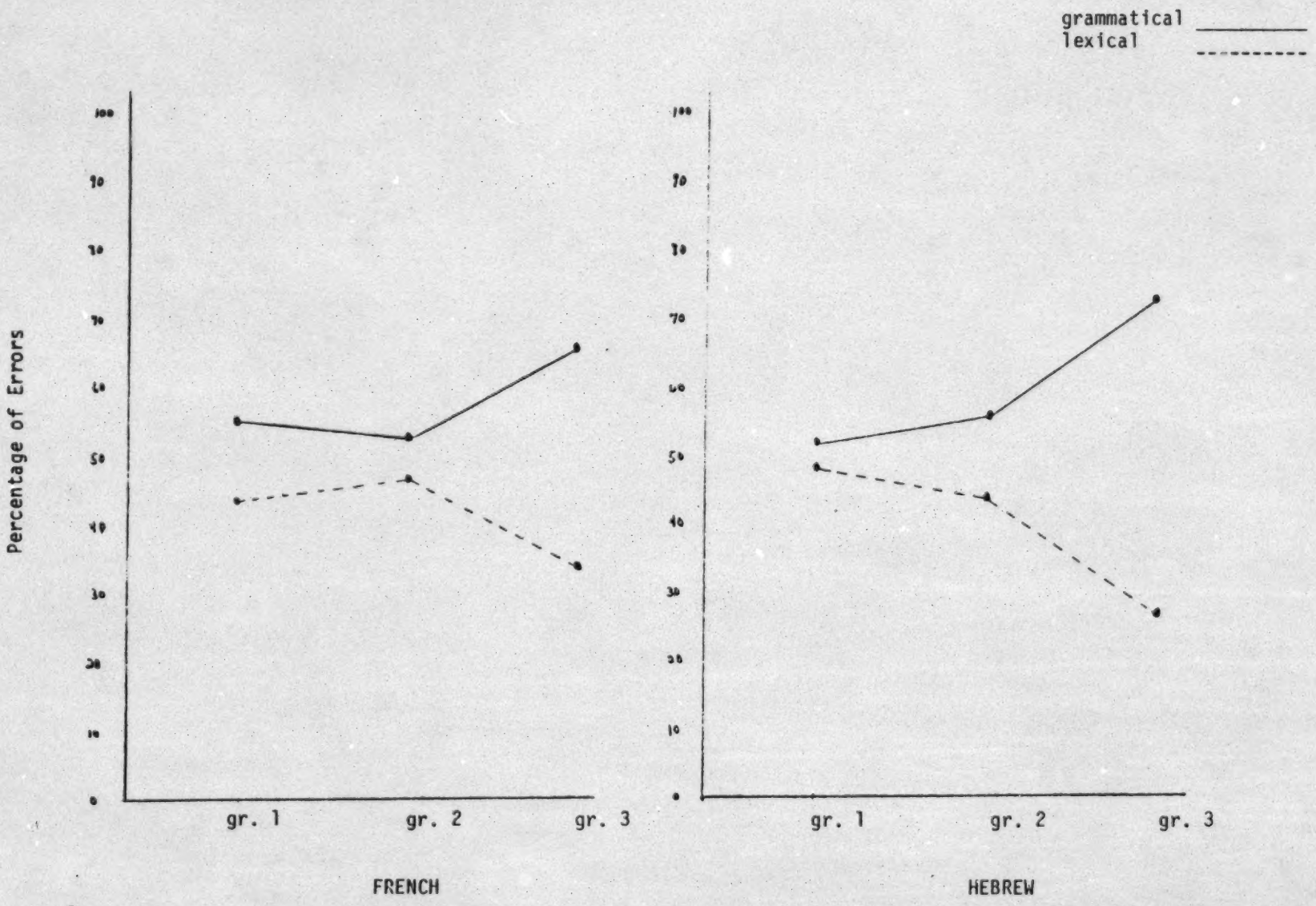

Figure 2

Distribution of Grammatical Interlingual Errors According to Error Type

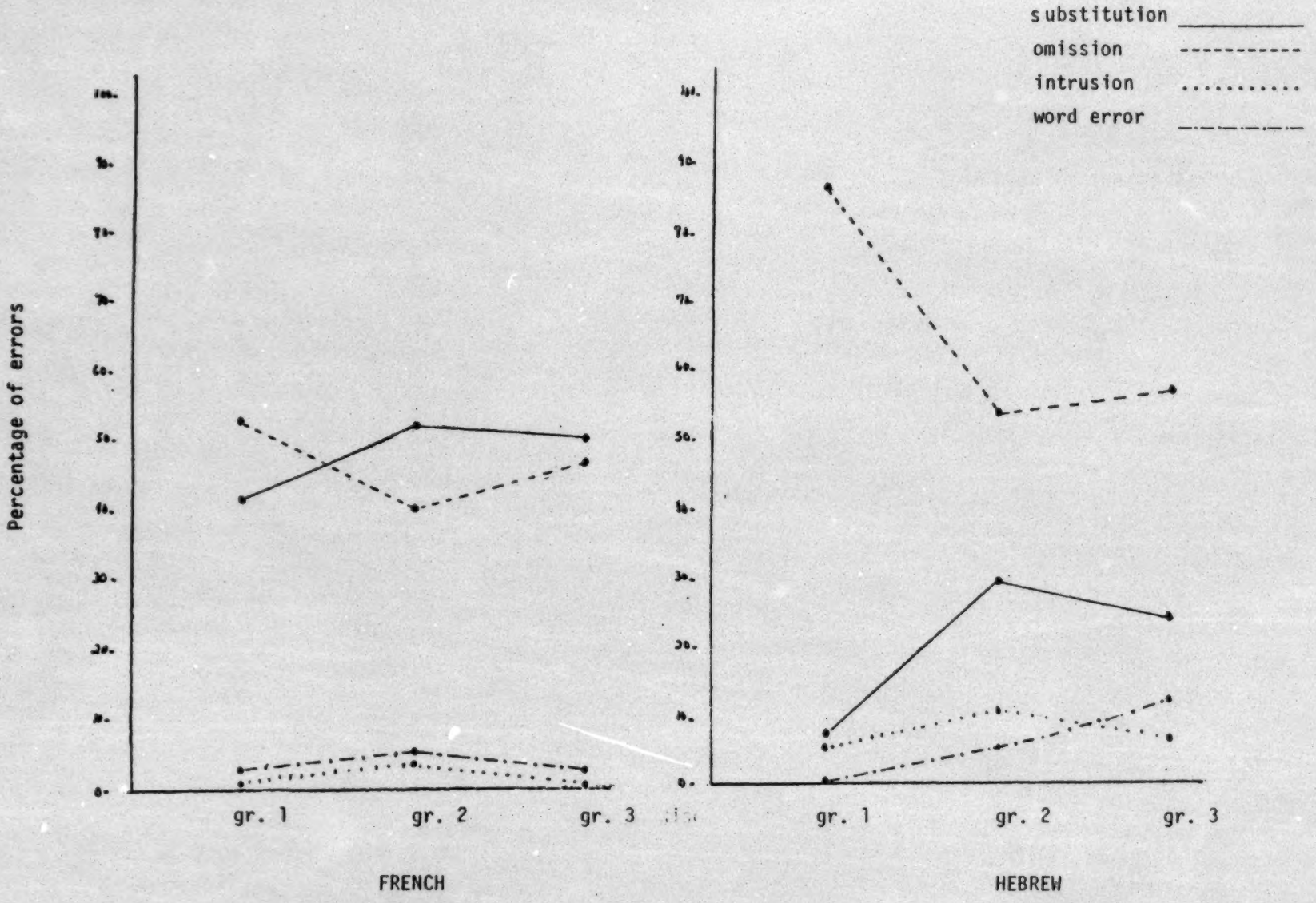

Figure 3

Distribution of Lexical Interlingual Errors According to Error Type